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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

TORRES, JOSEPH D

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 01/06/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/974,799

Applicant(s)

TOMARU ET AL.

Examiner

Joseph D. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☒ Claim(s) 16-25 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because:
 - It has reference numerals to the drawings (Note: all references to the drawings should be removed).
 - The abstract needs to be rewritten in grammatically correct idiomatic English, for example; in line 1, "communications method carried out" should be corrected perhaps to "communications method carriess out" if that is what is intended; and in lines 5 and 6, "in a transmission side" should be corrected perhaps to "at a transmission side" if that is what is intended.

Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claim 29 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can only refer back to claims in the alternative form. See MPEP § 608.01(n). Accordingly, the claim 29 has not been further treated on the merits.
3. Claims 16, 17-25 is objected to because of the following informalities: claim 16 recites, "in case no data packet is received for a predetermined period where the data packet is transmitted periodically". The Examiner would like to point out that the

previously quoted claim language fails to limit claim 16 because the term "in case" makes the previously quoted claim language optional. See MPEP 2106 II(C).

Appropriate correction is required.

Claims 17 and 23 use the term "in case" in a similar manner as in claim 16.

Claims 18-25 depend from claim 17, hence inherit the deficiencies in claim 17.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 recites, "a block that is most lately outputted from said transmitting end" which is incomprehensible and should be rewritten in correct idiomatic English.

Claim 4 depends from claim 3, hence inherits the deficiencies of claim 3.

5. Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 recites, "a block having a latest output time to be outputted from said transmitting end, among the blocks received by said receiving end" which is incomprehensible and should be rewritten in correct idiomatic English.

Claim 14 depends from claim 13, hence inherits the deficiencies of claim 13.

6. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 22 recites, "retransmitting all blocks contained in a data packet that has been transmitted just before" which is an incomplete phrase since it is not clear what "just before" is referring to. Claim 22 recites, "where it is set that said receiving end returns, upon receipt of the data packet, a signal to said transmitting end so as to inform that the data packet is received" which is incomprehensible.

7. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 23 recites, "transmitting a following data block to be transmitted next when no retransmission request is received in a predetermined period" which is an unclear phrase since it is not clear what "a following data block" is referring to since there is no reference to any other block in the claim. Claim 23 recites, "in case it is not set that said receiving end returns" which is incomprehensible.

8. Claims 22 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 22 and 23 are incomprehensible and should be rewritten in correct idiomatic English.

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

9. Claim 29 is rejected under 35 U.S.C. 112, first paragraph, because claim 29 is improperly multiple dependent from claims 9 and 17 and does not specify a further limitation. Note: the preamble has no patentable weight.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-11, 13-17, 21-25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by MacDonald, Neil E. et al. (US 5537416 A, hereafter referred to as MacDonald).

35 U.S.C. 102(b) rejection of claim 1.

MacDonald teaches a communications method, which uses a data packet composed of a plurality of blocks so as to communicate (col. 3, lines 1-5, MacDonald teach that n consecutive blocks are transmitted as a frame of information blocks; Note: The Authoritative Dictionary of IEEE Standards Terms defines packet as a block of

information that is transmitted within a single transfer operation, hence a frame is a packet since a frame is a unit of transmission at the data link layer or the physical layer used for transmitting a block of information within a single unit of transmission transfer operation), comprising the steps of: transmitting an error correction state of each block from a receiving end to a transmitting end (col. 10, lines 1-7 in MacDonald teach that ACK flags are used to transmit an error correction state of each block from a receiving end to a transmitting end); and retransmitting a block that is not error-corrected by the receiving end (col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted).

35 U.S.C. 102(b) rejection of claim 2.

MacDonald teaches each block in the data packet includes an error correction code (Note: Figure 3 in MacDonald teaches that each block has check bits labeled, CHK, in the drawing).

35 U.S.C. 102(b) rejection of claim 3.

Col. 10, lines 1-7 in MacDonald teaches that Ack flags are use to identify an information block that is most lately outputted from said transmitting end, among blocks received by said receiving end.

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35 U.S.C. 102(b) rejection of claim 4.

Col. 10, lines 1-7 in MacDonald teaches that when the apparatus receives a corrupted block it will transmit consecutive information blocks (Note: each information block includes a block number, TFNB, which is a clear indication of how many blocks the receiving end has finished error-correction decoding before transmitting the retransmission request), hence MacDonald teaches each block further includes information that indicates how many blocks the receiving end has finished error-correction decoding.

35 U.S.C. 102(b) rejection of claim 5.

Figure 1 of MacDonald teaches that the transmission reception apparatus is for real-time transmission and reception of video data over a radio link. Col. 5, lines 21-40 in MacDonald teach that the device in Figure 1 is CCITT h.261 compliant for use in real-time audio-visual applications.

35 U.S.C. 102(b) rejection of claim 6.

Figure 1 of MacDonald teaches that the transmission reception apparatus is for video, which is dynamic image data.

35 U.S.C. 102(b) rejection of claim 7.

MacDonald teaches a communications method, which uses a data packet composed of a plurality of blocks so as to communicate (col. 3, lines 1-5, MacDonald teach that n

consecutive blocks are transmitted as a frame of information blocks; Note: The Authoritative Dictionary of IEEE Standards Terms defines packet as a block of information that is transmitted within a single transfer operation, hence a frame is a packet since a frame is a unit of transmission at the data link layer or the physical layer used for transmitting a block of information within a single unit of transmission transfer operation), comprising the steps of: transmitting an error correction state of each block from a receiving end to a transmitting end (col. 10, lines 1-7 in MacDonald teach that ACK flags are used to transmit an error correction state of each block from a receiving end to a transmitting end); and retransmitting a block that is not error-corrected by the receiving end (col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted).

Col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted, hence the retransmission is performed on a per-block basis.

35 U.S.C. 102(b) rejection of claim 8.

MacDonald teaches each block in the data packet includes an error correction code (Note: Figure 3 in MacDonald teaches that each block has check bits labeled, CHK, in the drawing).

35 U.S.C. 102(b) rejection of claim 9.

Col. 6, lines 52-57 in MacDonald teach that MacDonald teaches that an FEC encoder is used to detect errors by determining if the block is FEC undecodable. Col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted, hence the retransmission is performed on a per-block basis.

35 U.S.C. 102(b) rejection of claim 10.

Col. 10, lines 1-7 in MacDonald teaches that when the apparatus receives a corrupted block it will transmit consecutive retransmission request information blocks identical in structure to originally transmitted blocks. MacDonald teaches each block in the data packet includes an error correction code (Note: Figure 3 in MacDonald teaches that each block has check bits labeled, CHK, in the drawing).

35 U.S.C. 102(b) rejection of claim 11.

Col. 10, lines 1-7 in MacDonald teaches that when the apparatus receives a corrupted block it will transmit consecutive retransmission request information blocks identical in structure to originally transmitted blocks, the retransmission request information blocks indicating which blocks need to be retransmitted.

35 U.S.C. 102(b) rejection of claim 13.

Col. 10, lines 1-7 in MacDonald teaches that Ack flags are used to identify an information block that is most lately outputted from said transmitting end, among blocks received by said receiving end.

35 U.S.C. 102(b) rejection of claim 14.

Col. 10, lines 1-7 in MacDonald teaches that when the apparatus receives a corrupted block it will transmit consecutive information blocks (Note: each information block includes a block number, TFNB, which is a clear indication of how many blocks the receiving end has finished error-correction decoding before transmitting the retransmission request), hence MacDonald teaches each block further includes information that indicates how many blocks the receiving end has finished error-correction decoding.

35 U.S.C. 102(b) rejection of claim 15.

MacDonald teaches error-correction decoding means for error-correction decoding per block with respect to the data packet that has been received (Col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the FEC decoder 212 in Figure 2 of MacDonald at the receiving end, the block is retransmitted, hence the retransmission is performed on a per-block basis); selecting means for selecting an uncorrectable block in accordance with a result of the

error-correction decoding (col. 10, lines 1-7 in MacDonald teach that ACK flags are used to transmit an error correction state of each block from a receiving end to a transmitting end; hence the ACK flags are a selecting means for selecting an uncorrectable block in accordance with a result of the error-correction decoding); and transmitting means for transmitting a retransmission request of the undecodable block (col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted by the transmitting means for the receiver in Figure 1 of MacDonald).

35 U.S.C. 102(b) rejection of claim 16.

MacDonald teaches a transmitting means for transmitting the retransmission request (col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted by the transmitting means for the receiver in Figure 1 of MacDonald).

35 U.S.C. 102(b) rejection of claim 17.

MacDonald teaches that in case said communications apparatus receives a retransmission request of a block that is undecodable for the receiving end (col. 10, lines 1-7 in MacDonald teaches that Ack flags are use to identify an information block that is undecodable for the receiving end), a following data packet that is to be

transmitted next or later includes the block requested by the retransmission request (col. 10, lines 1-7 in MacDonald teaches that when the apparatus receives a corrupted block it will transmit consecutive retransmission request information blocks identical in structure to originally transmitted blocks, the retransmission request information blocks indicating which blocks need to be retransmitted).

35 U.S.C. 102(b) rejection of claims 21-23.

MacDonald teaches an error-correction encoding means for performing error-correction encoding of data to be transmitted (Col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the FEC decoder 212 in Figure 2 of MacDonald at the receiving end, the block is retransmitted, hence the retransmission is performed on a per-block basis); generating means for generating the data packet in accordance with the retransmission request (col. 10, lines 1-7 in MacDonald teach that ACK flags are used to transmit an error correction state of each block from a receiving end to a transmitting end; hence the ACK flags are a generating means for generating the data packet in accordance with the retransmission request); and transmitting means for transmitting a retransmission request of the undecodable block (col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted by the transmitting means for the receiver in Figure 1 of MacDonald).

35 U.S.C. 102(b) rejection of claim 24.

Col. 10, lines 1-7 in MacDonald teaches that Ack flags used to identify an incorrectly received information block are included in each block of the data packet.

35 U.S.C. 102(b) rejection of claim 25.

MacDonald teaches each block in the data packet includes an error correction code (Note: Figure 3 in MacDonald teaches that each block has check bits labeled, CHK, in the drawing).

35 U.S.C. 102(b) rejection of claim 28.

Figure 1 in MacDonald teaches Radio Link protocol.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald, Neil E. et al. (US 5537416 A, hereafter referred to as MacDonald) in view of Lockhart, Thomas Wayne et al. (US 6161207 A, hereafter referred to as Lockhart).

35 U.S.C. 103(a) rejection of claim 12.

MacDonald, substantially teaches the claimed invention described in claims 1-11 (as rejected above).

However MacDonald, does not explicitly teach the specific use of a retransmission request that includes in one packet a plurality of pieces of information that indicate how many blocks are required to be retransmitted.

Lockhart, in an analogous art, teaches the NAK retransmission request of Step 312 in Figure 4 includes in one packet a plurality of pieces of information that indicate how many blocks are required to be retransmitted. One of ordinary skill in the art at the time the invention was made would have been highly motivated to use a single NAK retransmission request with a plurality of pieces of information that indicate how many blocks are required to be retransmitted to indicate how many blocks require retransmission (col. 6, lines 31-35, Lockhart).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify MacDonald with the teachings of Lockhart by including use of a retransmission request that includes in one packet a plurality of pieces of

information that indicate how many blocks are required to be retransmitted. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a retransmission request that includes in one packet a plurality of pieces of information that indicate how many blocks are required to be retransmitted would have provided the opportunity to indicate how many blocks require retransmission (col. 6, lines 31-35, Lockhart).

12. Claims 18-20, 26, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald, Neil E. et al. (US 5537416 A, hereafter referred to as MacDonald).

35 U.S.C. 103(a) rejection of claims 18-20.

MacDonald, substantially teaches the claimed invention described in claims 1-17 (as rejected above). Col. 16, lines 10-13 in MacDonald teach that if any of the acknowledgement bits used to acknowledge correctly received blocks is not set, i.e., if they indicate a block that is not error-corrected by the receiving end, the block is retransmitted.

However MacDonald, does not explicitly teach the specific location of the block in the retransmitted frame.

The Examiner asserts that the location of a block in a retransmitted frame would be an engineering design choice based on circuit design and transmission media, for example; particular locations within a frame may be more reliable.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of MacDonald by including an additional step of specifying a location for the block in the retransmitted frame. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that specifying a location for the block in the retransmitted frame would have provided the opportunity to improve reception by using more reliable locations within a frame.

35 U.S.C. 103(a) rejection of claims 26 and 27.

MacDonald, substantially teaches the claimed invention described in claims 1-25 (as rejected above). In addition, col. 3, lines 1-5, MacDonald teach that a fixed number of n consecutive blocks are transmitted as a frame of information blocks.

However MacDonald, does not explicitly teach the specific use of a fixed or variable number of blocks within a frame.

The Examiner asserts that use of a fixed or variable numbers of blocks within a frame are separate embodiments encompassed by the teachings in the MacDonald patent. Any embodiment of the MacDonald patent is based on obvious engineering design choice dictated by the particular transmission protocols in use.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of MacDonald by including use of a fixed or variable number of blocks within a frame. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of

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ordinary skill in the art would have recognized that use of a fixed or variable number of blocks within a frame would have provided the opportunity to implement an obvious embodiment the teachings in the MacDonald patent based on obvious engineering design choices dictated by the particular transmission protocols in use.

Conclusion

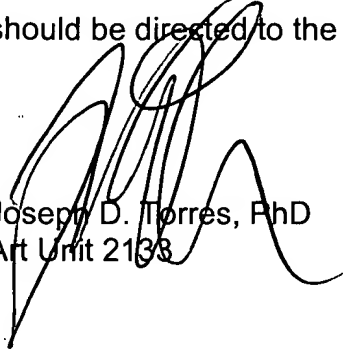
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Javerbring, Stefan et al. (US 6604216 B1) teaches a wireless communications system and method capable of supporting an incremental redundancy error handling scheme using available gross rate channels. Persson, Joakim et al. (US 6421803 B1) teaches error control coding to ensure the reliability of transmitted information. Rittle, Loren J. (US 6173431 B1) teaches transmitting and receiving information packets using multi-layer error detection. Darmon, Marc et al. (US 5313473 A) teaches a method and apparatus for digital data transmission with automatic repeat request (ARQ) in the event of a message being badly received.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-746-7240.



Joseph D. Torres, PhD
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